BRIDGEABLE POWER AMPLIFIER

AMPLIFICATEUR DE PUISSANCE PONTABLE

OWNER'S MANUAL
MODE D'EMPLOI

Thank you for purchasing this PIONEER product. Before attempting operation, be sure to read this manual.

Grazie per aver acquistato questo prodotto PIONEER. Leggere attentamente queste istruzioni prima di usare questa unità.

Nous vous remercions d'avoir acheté cet appareil PIONEER. Avant de l'utiliser, prendre soin de lire ce manuel.

Vielen Dank für den Kauf dieses PIONEER Produkts.
Diese Bedienungsanleitung vor der Inbetriebnahme sorgfältig durchlesen.

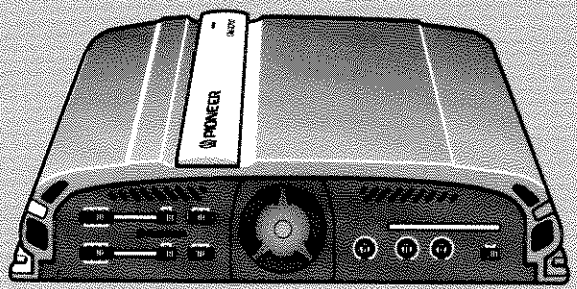
Dank U zeer voor de aanschaf van dit PIONEER-produkt.
Lees deze gebruiksaanwijzing goed door, voordat het toestel in gebruik genomen wordt.

Muchas gracias por la adquisición de este producto PIONEER. Antes de tratar de operarlo, lea atentamente este manual.

Vi tackar dig för att du valt denna PIONEER-produkt. Läs först igenom denna bruksanvisning innan apparaten tas i bruk.

Takk for kjøpet av dette PIONEER-produktet. Les denne bruksanvisningen grundig før du tar apparatet i bruk.

Kiitos PIONEER-tuotteen hankinnasta. Ennen käyttöä pyydämme kuitenkin lukemaan huolellisesti tämän käsikirjan.



GM-X702

PIONEER®

The Art of Entertainment

GM-X702
GM-X602

ENGLISH

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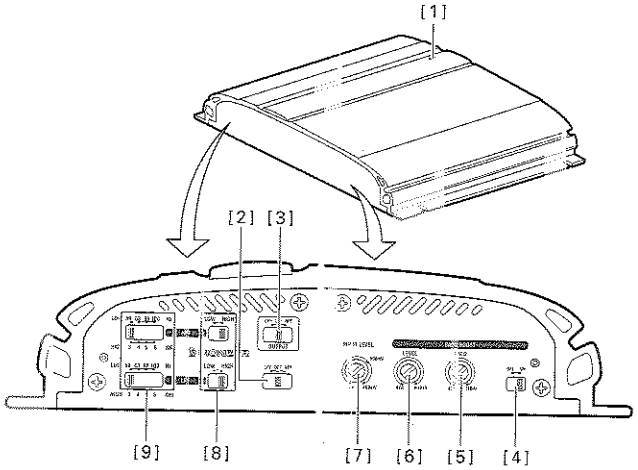

Fig. 1 Abb. 1

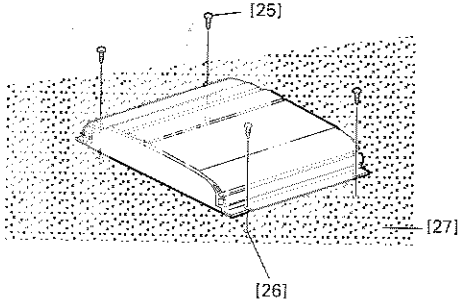

Fig. 2 Abb. 2

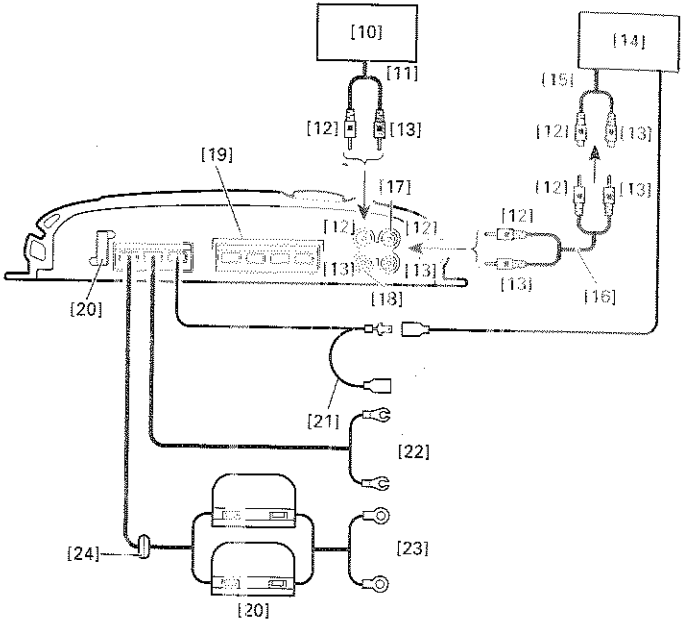

Fig. 3 Abb. 3

Symbols

The following two symbols are used in this manual.

⚠ **CAUTION**

— never do this.

This symbol indicates dangerous actions which must be avoided.

Note

— follow the instructions carefully.

This symbol indicates action which can cause the equipment to fail if it is wrongly performed.

⚠ WARNING

- *Do not touch the amplifier with wet hands. Otherwise you may get an electric shock. Also, do not touch the amplifier when it is wet.*
- *For traffic safety and to maintain safe driving conditions, keep the volume low enough so that you can still hear normal traffic sound.*
- *Check the connections of the power supply and speakers if the fuse of the sold separately special red battery wire [RD-223] or the amplifier fuse blows. Detect the cause and solve the problem, then replace the fuse with another one of the same size and rating.*
- *To prevent malfunction of the amplifier and speakers, the protective circuit will cut the power supply to the amplifier (sound will stop) when an abnormal condition occurs. In such a case, switch the power to the system OFF and check the connection of the power supply and speakers. Detect the cause and solve the problem.*
- *Contact the dealer if you cannot detect the cause.*
- *To prevent an electric shock or short-circuit during connection and installation, be sure to disconnect the negative (–) terminal of the battery beforehand.*
- *Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-223] are designed so that the amplifier can be safely connected.)*
- *Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Be sure to protect all cables and important equipment such as fuel lines, brake lines and the electrical wiring from damage.*
- *To prevent an electric shock, do not install the amplifier in places where it might become in contact with liquids.*
- *To ensure proper heat dissipation of the amplifier, be sure of the following during installation.*
  - *Allow adequate space above the amplifier for proper ventilation. Take special care not to block the cooling fan side of the amplifier.*
  - *Do not cover the amplifier with a floor mat or carpet.*

Setting The Unit

(Fig. 1)

[1] Power Indicator

The power indicator lights when the power is switched on.

[2] Speaker Output: LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

Set the LPF/HPF select switch as follows according to the type of speaker that is connected to the speaker output connector and the car stereo system.

LPF/HPF Select Switch	Audio frequency range to be output		Speaker Type	Remarks
	LOW	HIGH		
LPF (left)	* — 50 / 63 / 80 / 100 Hz	* — 3 k / 4 k / 5 k / 6 kHz	Sub-woofer /mid	Set the switch to this position to cut off the frequencies * higher than or equal to the cut off frequency according to the speaker that you are using.
OFF (center)	Very-low-frequency range to high-frequency range		Other than sub-woofer	
HPF (right)	* 50 / 63 / 80 / 100 Hz —	* 3 k / 4 k / 5 k / 6 kHz —	Other than sub-woofer	Set the switch to this position to cut off the frequencies * lower than or equal to the cut off frequency according to the speaker that you are using.

* The cut off frequencies of the LPF and HPF cut off frequency can be switched between 50, 63, 80, 100, 3 k, 4 k, 5 k and 6 kHz. See the "Cut Off Frequency Select Switch" section for details of the cut off frequency switch.

[3] RCA Output: LPF (Low-Pass Filter)/HPF (High-Pass Filter) Select Switch

You can connect two or more amplifiers to this unit by using the RCA output. The RCA output LPF/HPF select switch is used to select either LPF or HPF for the RCA output. Set the switch as follows according to the setting of the next amplifier to be connected and the speaker or car stereo system to be connected to the speaker output.

LPF/HPF Select Switch	Audio frequency range to be output		Speaker Type	Remarks
	LOW	HIGH		
LPF (left)	* — 50 / 63 / 80 / 100 Hz	* — 3 k / 4 k / 5 k / 6 kHz	Sub-woofer /mid	Set the switch to this position to cut off the frequencies * higher than or equal to the cut off frequency according to the setting of the next amplifier to be connected and the speaker that you are using.
OFF (center)	Very-low-frequency range to high-frequency range		Other than sub-woofer	
HPF (right)	* 50 / 63 / 80 / 100 Hz —	* 3 k / 4 k / 5 k / 6 kHz —	Other than sub-woofer	Set the switch to this position to cut off the frequencies * lower than or equal to the cut off frequency according to the setting of the next amplifier to be connected and the speaker that you are using.

* The cut off frequencies of the LPF and HPF cut off frequency can be switched between 50, 63, 80, 100, 3 k, 4 k, 5 k and 6 Hz. See the "Cut Off Frequency Select Switch" section for details of the cut off frequency switch.

[4] Bass Boost Switch

If you turn the Bass Boost Switch on, you can adjust the bass using the bass boost frequency control and bass boost level control. If you do not adjust the bass, set this switch to OFF.

[5] Bass Boost Frequency Control

You can select a bass boost frequency from 40 to 120 Hz with the bass boost control.

- A frequency in the range 40 to 120 Hz can be adjusted. If a frequency in the range 40 to 120 Hz is cut off or attenuated in [2] or [9], the sound may not change at all or change only slightly when the bass is adjusted.

[6] Bass Boost Level Control

Bass boost level control can boost the level around the frequency selected by the bass boost frequency control from 0 to 12 dB.

[7] Input Level Adjustment

If the sound is too low, even when the volume of the car stereo used along with this power amplifier is turned up, turn input level control on the back of the power amplifier clockwise. If the sound distorts when the volume is turned up, turn the input level control counterclockwise.

- Set the input level control to 500 mV when this amplifier is connected to a Pioneer car stereo with RCA output jacks. If the sound is too low or distorts, adjust the input level control.

[8] Low/High Select Switch

If you set the Low/High select switch to Low, the cut off frequency is set to 50 / 63 / 80 / 100 Hz. If you set the switch to High, the cut off frequency is set to 3 / 4 / 5 / 6 kHz.

[9] Cut Off Frequency Select Switch

If the LPF/HPF select switch for speaker output and the LPF/HPF select switch for RCA output are set to LPF or HPF, the cut off frequency can be changed.

- If you change the cut off frequencies of both speaker output and RCA output, set them to the same value. If they are different, unnatural sounds may be output.

LPF Cut Off Frequency Select Switch

If you set the LPF Low/High select switch to Low, 50 / 63 / 80 / 100 Hz and lower frequencies are output. If you set the switch to High, 3 / 4 / 5 / 6 kHz and lower frequencies are output. Set the switch to the appropriate position for the speakers and the car stereo system that you are using.

- The set cut off frequency is common to the speaker output and RCA output.

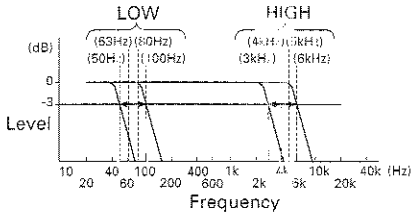

Fig. 4

HPF Cut Off Frequency Select Switch

If you set the HPF Low/High select switch to Low, 50 / 63 / 80 / 100 Hz and higher frequencies are output. If you set the switch to High, 3 / 4 / 5 / 6 kHz and higher frequencies are output. Set the switch to the appropriate position for the speakers and the car stereo system that you are using.

- The set cut off frequency is common to the speaker output and RCA output.

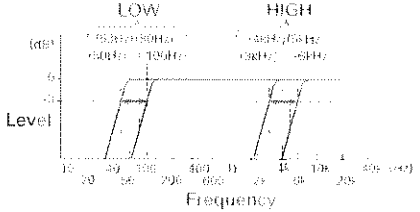

Fig. 5

BFC (Beat Frequency Control) Switch

If you hear a beat while listening to an AM broadcast with your car stereo, change the position of the BFC switch using a small screwdriver.

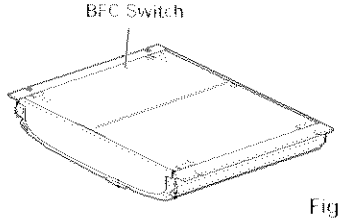

Fig. 6

Connecting The Unit

⚠ CAUTION

- *Remove the negative (-) terminal of the battery to avoid the risk of a short-circuit and damage to the unit.*
- *Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.*
- *Do not route wires where they will get hot, for example where the heater will blow over them. If the insulation heats up, it may become damaged, resulting in a short-circuit through the vehicle body.*
- *Make sure that wires will not interfere with moving parts of the vehicle, such as the gearshift, handbrake or seat sliding mechanism.*
- *Do not shorten any leads. Otherwise the protection circuit may fail to work when it should.*
- *Never feed power to other equipment by cutting the insulation of the power supply wire to tap from the wire. The current capacity of the wire will be exceeded, causing overheating.*
- *Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-223] are designed so that the amplifier can be safely connected.)*

⊘ To prevent damage

- *Do not ground the speaker wire directly or connect a negative (–) wire for several speakers.*
- *Speakers to be connected to the amplifier should conform with the standards listed below. Otherwise damage will occur to the speaker. The speaker impedance must be 2 to 8 ohms.*

GM-X702

Speaker		Power
Channel	Type	
Two-channel	Sub-woofer	Nominal input: Min. 75 W
	Other than sub-woofer	Max. input: Min. 150 W
One-channel	Sub-woofer	Nominal input: Min. 200 W
	Other than sub-woofer	Max. input: Min. 400 W

GM-X602

Speaker		Power
Channel	Type	
Two-channel	Sub-woofer	Nominal input: Min. 50 W
	Other than sub-woofer	Max. input: Min. 100 W
One-channel	Sub-woofer	Nominal input: Min. 140 W
	Other than sub-woofer	Max. input: Min. 280 W

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- Install and route the sold separately special red battery wire [RD-223] as faraway as possible from the speaker wires. Install and route the sold separately special red battery wire, ground wire [RD-223], speaker wires, and the amplifier as faraway as possible from the antenna, antenna cable and tuner.

⊘ If many units are connected

- *If the car stereo is kept on for a long time while the engine is at rest or idling, the battery may go dead. Turn the car stereo off when the engine is at rest or idling.*
- *If the blue wire of the amplifier is connected to the power terminal through the ignition switch (12 VDC), the amplifier will always be on when the ignition is on— regardless of whether the car stereo is on or off. Because of this, the battery could go dead if the engine is at rest or idling.*

(Fig. 2)

[10] Amplifier with RCA input jack
[11] RCA input
[12] White
[13] Red
[14] Car stereo with RCA output jack
[15] RCA output
[16] Connecting wire with RCA plug. (sold separately)
[17] RCA input jack
[18] RCA output jack
[19] Speaker output terminals
See the "Connecting the Speakers" section for speaker connection instructions.
[20] Fuse (Special red battery wire: 30 A × 2, Amplifier: 30 A for the GM-X702, and 25 A for the GM-X602)
[21] Blue [RD-223] (sold separately)
Connect the male terminal of this wire to the blue wire of the car stereo (system remote control terminal). The female terminal can be connected to the auto-antenna relay control terminal. If the car stereo does not have a system remote control terminal, connect the male terminal to the power terminal through the ignition switch.
[22] Ground wire (black) [RD-223] (sold separately)
Connect to metal body or chassis.
[23] Special red battery wire [RD-223] (sold separately)
After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
[24] Grommet

Connecting the Power Terminal

- *Always use the special red battery and ground wire [RD-223], which is sold separately. Connect the special red battery wire directly to the car battery positive terminal (+) and the black ground wire to the car body. (The special red battery and ground wire [RD-223] are designed so that the amplifier can be safely connected.)*

1. Pass the special red battery wire from the engine compartment to the interior of the vehicle.

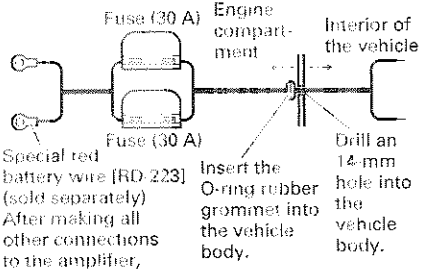
Fuse (30 A)
Engine compartment
Interior of the vehicle
Fuse (30 A)
Special red battery wire [RD-223] (sold separately) After making all other connections to the amplifier, connect the battery wire terminal of the amplifier to the positive (+) terminal of the battery.
Insert the O-ring rubber grommet into the vehicle body.
Drill an 14-mm hole into the vehicle body.

Fig. 7

2. Twist the sold separately special red battery wire, ground wire, and system remote control wire [RD-223].

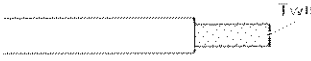

Fig. 8

3. Connect the wires to the terminal.

- Fix the wires securely with the terminal screws.

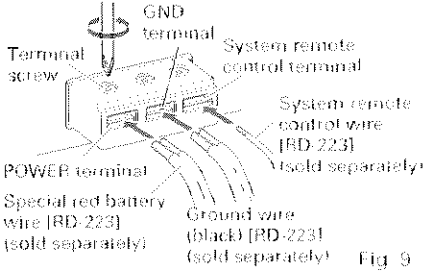
GND terminal
Terminal screw
System remote control terminal
System remote control wire [RD-223] (sold separately)
POWER terminal
Special red battery wire [RD-223] (sold separately)
Ground wire (black) [RD-223] (sold separately)

Fig. 9

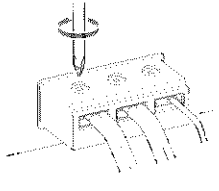

Fig. 10

4. Bundle the wires at a point about 100 mm away from the terminal with a clamper (RD-223).

- Be sure to fix the wires securely with the clamper.

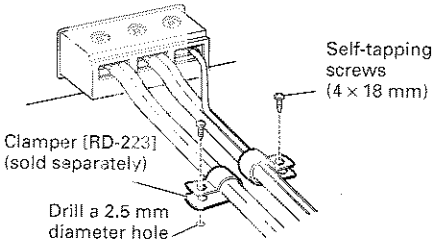

Fig. 11

Connecting the Speakers

The speaker output mode can be two-channel (stereo), one-channel (mono). Connect the speaker leads to suit the mode. Connect the speakers according to the figure on the following pages.

Two-channel mode (stereo)

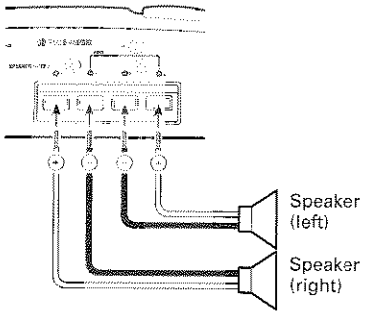

Fig. 12

One-channel mode (mono)

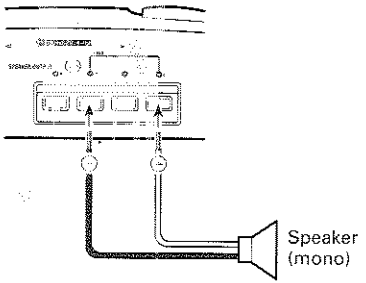

Fig. 13

Connecting the Speaker Output Terminals

1. Expose the end of the speaker wires by about 10 mm and twist it using nippers or a cutter.

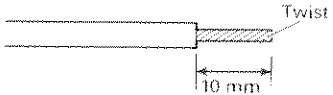

Fig. 14

2. Connect the speaker wires to the speaker output terminals.

- Fix the speaker wires securely with the terminal screws.

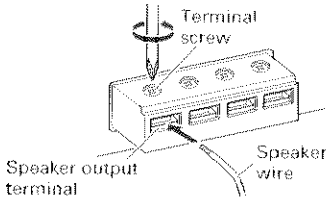

Fig. 15

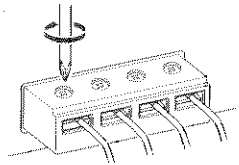

Fig. 16

Installation

⚠ CAUTION

- *Do not install in:*
  - *— Places where it could injure the driver or passengers if the vehicle stops suddenly.*
  - *— Places where it may interfere with the driver, such as on the floor in front of the driver's seat.*
- *Make sure that wires are not caught in the sliding mechanism of the seats, resulting in a short-circuit.*
- *Confirm that no parts are behind the panel when drilling a hole for installation of the amplifier. Protect all cables and important equipment such as fuel lines, brake lines and electrical wiring from damage.*
- *Install tapping screws in such a way that the screw tip does not touch any wire. This is important to prevent wires from being cut by vibration of the car, which can result in fire.*
- *To prevent electric shock, do not install the amplifier in places where it might come in contact with liquids.*
- *To ensure proper installation, use the supplied parts in the manner specified. If any parts other than the supplied ones are used, they may damage internal parts of the amplifier, or they may become loose causing the amplifier to shut down.*

⊘ To prevent Malfunction

- *To ensure proper heat dissipation of the amplifier, be sure of the following during installation.*
  - *— Allow adequate space on top of the amplifier for proper ventilation. Take special care not to block the cooling fan side of the amplifier.*
  - *— Do not cover the amplifier with a floor mat or carpet.*
- *Do not install the amplifier near a door where it may get wet.*
- *Do not install the amplifier on unstable places such as the spare tire board.*
- *The best location for installation differs with the car model and installation location. Secure the amplifier at a sufficiently rigid location.*
- *Make temporary connections first and check that the amplifier and the system operate properly.*
- *After installing the amplifier, confirm that the spare tire, jack and tools can be easily removed.*

Example of Installation on the floor mat or on the chassis

1. Place the amplifier where it is to be installed. Insert the supplied tapping screws (4 - 18 mm) into the screw holes. Push on the screws with a screwdriver so they make marks where the installation holes are to be located.
2. Drill 2.5-mm diameter holes at the point marked, and install the amplifier, either on the carpet or directly to the chassis.

(Fig. 3)
[25] Self-tapping screws (4 - 18 mm)
[26] Drill a 2.5-mm-diameter hole.
[27] Floor mat or chassis

Precautions

In case of trouble
When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station.

Specifications

GM-X702

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Current consumption ..... 28 A (at continuous power, 4 Ω)
Average current drawn* ..... 7 A (4 Ω for two channels)
12 A (4 Ω for one channel)
Fuse ..... 30 A
Dimensions ..... 250 (W) × 57.5 (H) × 240 (D) mm
Weight ..... 3.2 kg
Maximum power output ..... 150 W × 2 / 400 W × 1 (EIAJ)
Continuous power output
..... 120 W × 2 / 320 W × 1 (DIN45324, + B = 14.4 V)
Load impedance ..... 4 Ω (2 — 8 Ω allowable)
Frequency response ..... 10 — 60,000 Hz (+0 dB, −1 dB)
Signal-to-noise ratio ..... 105 dB (IEC – A network)
Distortion ..... 0.003 % (10 W, 1 kHz)
Separation ..... 71 dB (1 kHz)
Low pass filter
..... Cut off frequency: 50 / 63 / 80 / 100 / 3k / 4k / 5k / 6 kHz
Cut off slope: −12 dB/oct
High pass filter
..... Cut off frequency: 50 / 63 / 80 / 100 / 3k / 4k / 5k / 6 kHz
Cut off slope: −12 dB/oct
Bass boost ..... Frequency: 40 — 120 Hz
Gain: 0 — 12 dB
Input level/ impedance ..... 0.4 — 2 V / 22 kΩ

GM-X602

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Current consumption ..... 18 A (at continuous power, 4 Ω)
Average current drawn* ..... 5 A (4 Ω for two channels)
8.5 A (4 Ω for one channel)
Fuse ..... 25 A
Dimensions ..... 250 (W) × 57.5 (H) × 210 (D) mm
Weight ..... 2.9 kg
Maximum power output ..... 100 W × 2 / 280 W × 1 (EIAJ)
Continuous power output
..... 80 W × 2 / 250 W × 1 (DIN45324, + B = 14.4 V)
Load impedance ..... 4 Ω (2 — 8 Ω allowable)
Frequency response ..... 10 — 65,000 Hz (+0 dB, −1 dB)
Signal-to-noise ratio ..... 105 dB (IEC – A network)
Distortion ..... 0.003 % (10 W, 1 kHz)
Separation ..... 79 dB (1 kHz)
Low pass filter
..... Cut off frequency: 50 / 63 / 80 / 100 / 3k / 4k / 5k / 6 kHz
Cut off slope: −12 dB/oct
High pass filter
..... Cut off frequency: 50 / 63 / 80 / 100 / 3k / 4k / 5k / 6 kHz
Cut off slope: −12 dB/oct
Bass boost ..... Frequency: 40 — 120 Hz
Gain: 0 — 12 dB
Input level/ impedance ..... 0.4 — 2 V / 22 kΩ

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

***Average current drawn**
The average current drawn is nearly the maximum current drawn by this unit when an audio signal is input. Use this value when working out total current drawn by multiple power amplifiers.

France: tapez 36 15 PIONEER

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